Northern Rockies Lynx Amendment
Draft Environmental Impact Statement - Summary

Responsible Agency: USDA Forest Service
Cooperating Agency: USDI Bureau of Land Management

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Comments must be received by April 15, 2004

Abstract: The Forest Service and BLM are proposing to amend plans on 18 National Forest and four BLM administrative units to incorporate direction to manage lynx habitat. The DEIS was developed to meet the Purpose and Need of the amendment and to respond to primary issues. The Purpose and Need is to incorporate management direction that conserves and promotes the recovery of the Canada lynx, by reducing or eliminating adverse effects from land management activities on NFS and BLM lands, while preserving the overall multiple-use direction in existing plans. Lynx was listed as a threatened species in 2000 due the lack of guidance for conservation of lynx and snowshoe hare habitat in existing plans.

Public comments collected during scoping were used to identify primary issues, management concerns, alternatives and the scope of the DEIS. Five alternatives, including no action, were fully developed and considered. All action alternatives would incorporate varying degrees of management direction for vegetation, fire, grazing, recreation, minerals, roads and highways. An additional 21 alternatives were also considered but not fully developed. Alternative E is the preferred alternative.

Reviewer Comments: Reviewers should provide the Forest Service and BLM with their comments during the review period so the agencies can analyze and respond to all the comments at the same time, use information received to prepare the final EIS, and avoid undue delay in making the decision. Reviewers are asked to structure comments clearly to help the agencies understand their positions and recommendations *(Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 553 (1978))*. Environmental objections that could have been raised at the draft stage may be waived if they are not raised until the final statement is completed *(City of Angoon v. Hodel (9th Circuit, l986) and Wisconsin Heritages, Inc. v. Harris, 490 F. Supp. 1334, 1338 (E.D. Wis. 1980))*. The most helpful comments are specific and address the adequacy of the statement and the merits of the alternatives (40 CFR 1503.3).

Summary

Purpose and need

The Purpose and Need for the proposed amendment is to incorporate management direction that conserves and promotes recovery of the Canada lynx, by reducing or eliminating adverse effects from land management activities on national forest system and BLM lands, while preserving the overall multiple-use direction in existing plans.

Background

Canada lynx occupy habitat in Colorado, Idaho, Maine, Michigan, Minnesota, Montana, New Hampshire, New York, Oregon, Utah, Vermont, Washington, Wisconsin and Wyoming. In the western United States, lynx habitat is found primarily on federal lands.

Lynx inhabit moist coniferous forests that experience cold, snowy winters and provide a prey base of snowshoe hare. Lynx habitat is primarily found on moist sites that support subalpine fir, Engelmann spruce and lodgepole pine forests. In extreme northern Idaho and northwestern Montana, cedar-hemlock forests also are considered lynx habitat.

Lynx habitat is generally found at mid to upper elevations. The bottom elevation ranges from 3,500 feet in the northern to 7,000 feet in the southern portions of the Northern Rockies lynx amendment area.

On July 8, 1998, the FWS (U.S. Fish and Wildlife Service) proposed to list the Canada lynx as a threatened species under ESA (the Endangered Species Act). The FS (Forest Service) and BLM responded to the declining status of lynx in 1998 by establishing a team of international experts in lynx ecology to collect and summarize scientific data. This resulted in the publication *Ecology and Conservation of Lynx in the United States*.

Based on this information, an interagency team of government biologists developed the LCAS, *Lynx Conservation Assessment and Strategy*. The LCAS recommended conservation measures for federal lands in the contiguous United States. The conservation measures focus on managing vegetation within the historic range of variability, maintaining dense understory conditions for prey, minimizing snow compaction, and identifying and maintaining connectivity within and between habitat areas.

In December 1999, the FS and BLM prepared a BA, a *Biological Assessment (*Hickenbottom et al. 1999) of 57 FS land and resource management plans and 56 BLM land use plans. The assessment found the existing plans were likely to adversely affect lynx because they did not contain direction to conserve lynx.

In February 2000, five Regional Foresters and four FWS Regional Directors signed a *Lynx Conservation Agreement* to promote the conservation of lynx and its habitat. In August 2000, the BLM Assistant Director for Renewable Resources and Planning and two FWS Regional Directors signed a similar agreement.

Both conservation agreements require the agencies to review and consider the recommendations in the LCAS before making any decisions about actions in lynx habitat. The agreements say changes in long-term management direction will be made by amending or revising existing plans.

In April of 2000, the FWS listed the lynx as a threatened species. In its Listing Decision, the FWS said,

> *"We conclude that the single factor threatening the contiguous United States Distinct population segment of lynx is the lack of guidance for conservation of lynx and snowshoe hare habitat in National Forest Land and Resource Plans and BLM Land Use Plans."*

Formal consultation on existing plans required by ESA was completed on October 25, 2000, when the FWS issued its BO, *Biological Opinion*. In the BO, the FWS said existing plans as applied together with the conservation agreements, were not likely to jeopardize the continued existence of lynx.

In March 2001, the FS and BLM developed schedules to amend or revise their land use and resource management plans. In September 2001, the FS and BLM initiated the Northern Rockies Lynx Amendment, a proposal to amend existing plans for 22 units in the northern Rockies.

In July 2003, the FWS issued a Notice of Remanded Determination of Status for the contiguous United States population of lynx. In it, the FWS reaffirmed its decision to list the lynx as threatened, rather than endangered.

Proposed action

In order to provide conservation and recovery of the Canada lynx the FS and the BLM propose to amend land and resource management plans for 18 national forests (NF) in Idaho, Montana, Utah, Washington and Wyoming, and land use plans for four BLM administrative units in Idaho and Utah. Collectively these will be referred to as "*existing plans*." The FS is the lead agency responsible for preparing this amendment; Idaho and Utah BLM are cooperating agencies.

The original Proposed Action was based on conservation measures in the LCAS as a way to achieve lynx conservation. Measures from the LCAS were reorganized and rearranged to make it easier to include them in the existing plans. Every effort was made to preserve the intent of the measures in the LCAS.

Alternative B, the Proposed Action, has changed from how it was described during scoping. It was rewritten to provide clearer management direction by organizing it better and eliminating duplication.

The original Proposed Action is now Alternative B and has changed somewhat from how it was described in the fall of 2001 when the agencies asked for public comments on the scope of the proposal. It was rewritten to provide clearer management direction by organizing it better and eliminating duplication.

Throughout this document, references to the Proposed Action mean Alternative B, the DEIS Proposed Action.

The proposed amendment would add or modify management direction consisting of one or more of the following:

- *Goals,* which are general descriptions of desired results;
- *Objectives,* which are descriptions of desired resource conditions;
- *Standards,* which are management requirements designed to meet the objectives; and
- *Guidelines,* management actions normally taken to meet the objectives.

The existing plans contain general resource management direction. Plans do not compel management activities to occur. Whether goals and objectives are achieved depends on agency budgets and competing priorities. Standards may prohibit some management activities from occurring; however, standards can be changed through subsequent plan amendment or revision. Guidelines are recommendations and following them is discretionary.

The LCAS identified risks to lynx and lynx habitat. The BA found many of the risk factors were not addressed in existing plans. Reducing or eliminating these risks is part of the Purpose and Need for this amendment.

Risk factors affecting lynx productivity (*productivity* means the ability to continue to reproduce) include

- Timber management
- Wildland fire management
- Livestock grazing
- Recreational uses
- Forest backcountry roads and trails
- Other human developments

Risk factors affecting mortality include

- Trapping
- Shooting
- Predator control
- Highways
- Predation by other species

Risk factors affecting movement

- Highways and associated development
- Private land development

The FWS decision to list lynx as threatened was based on a subset of these risks, which threaten the lynx population as a whole. Threats to lynx populations influenced by national forests and BLM land management include timber harvest regimes and fire suppression, as well as the lack of guidance to address these threats in existing plans.

Administrative units included in the amendment

Table 1. Administrative units and plans that would be amended

Forest Service		
Idaho national forest units	FS region	Land and resource management plan
Clearwater	1	Clearwater forest plan
Idaho Panhandle	1	Idaho Panhandle forest plan
Nez Perce	1	Nez Perce forest plan
Salmon-Challis	4	Salmon forest plan
	4	Challis forest plan
Caribou-Targhee	4	Targhee forest plan
Montana national forest units	FS region	
Beaverhead-Deerlodge	1	Beaverhead forest plan
	1	Deerlodge forest plan
Bitterroot	1	Bitterroot forest plan
Custer	1	Custer forest plan
Flathead	1	Flathead forest plan
Gallatin	1	Gallatin forest plan
Helena	1	Helena forest plan
Kootenai	1	Kootenai forest plan
Lewis and Clark	1	Lewis and Clark forest plan
Lolo	1	Lolo forest plan
Utah national forest units	FS region	
Ashley	4	Ashley forest plan
Wyoming national forest units	FS region	
Bighorn	2	Bighorn forest plan
Bridger-Teton	4	Bridger-Teton forest plan
Shoshone	2	Shoshone forest plan
Bureau of Land Management		
Idaho districts	BLM field office	Land use plan
Lower Snake River	Four River	Cascade resource management plan
Upper Columbia/ Salmon/Clearwater	Salmon	Lemhi resource management plan
	Challis	Challis resource management plan
	Coeur d'Alene	Emerald Empire management framework plan
	Cottonwood	Chief Joseph management framework plan
Upper Snake River	Idaho Falls	Medicine Lodge MFP
	Pocatello†	Pocatello resource management plan†
	Shoshone	Sun Valley management framework plan
Utah field office		
Salt Lake City†		Randolph management framework plan†

†These units do not have lynx habitat, so only the linkage direction in this amendment applies

Alternatives

Public involvement

The public has been involved in this amendment from the time when the FS and BLM first began trying to determine the scope of public interest in the project, on September 11, 2001, when a notice was published in the *Federal Register*, Volume 66, Number 176, 47160-47163. Originally, the comment period was scheduled to end on October 26, 2001, but it was extended to December 10, 2001.

An official website was created at www.fs.fed.us/r1/planning/lynx.html, providing information about the amendment, including the information used to develop the Proposed Action.

Open-house meetings were held to provide a better understanding of the lynx proposal and to gain an understanding of public issues and concerns. Open houses were held in:

- Idaho at Bonners Ferry, Challis, Coeur d'Alene, Coolin, Grangeville, Idaho Falls, Orofino and Salmon;
- Montana at Billings, Bozeman, Dillon, Great Falls, Hamilton, Helena, Kalispell, Libby and Missoula; and
- Wyoming at Cody, Jackson Hole, Riverton and Sheridan.

FS and BLM units mailed out more than 6,000 letters about the proposed amendment and upcoming meetings to their mailing lists of people interested in land management issues.

Tribes with aboriginal territories located inside the amendment area were identified and individual letters written to each of them. The letters asked for their participation and identified local federal contacts. The governor's office for each state within the amendment area was also contacted about their briefing needs.

The 1,890 public responses to the scoping notice that were received by December 17, 2001, were evaluated and summarized in a report called *Summary of Public Comments.* Many responses were signed by more than one person. Responses received after December 17, 2001, but before the release of this DEIS, were also considered.

In mid-May 2002, an eight-page update was mailed to the more than 2,000 addresses of the people who responded to the scoping notice.

On August 15, 2002, a Notice of Intent to prepare an Environmental Impact Statement was published in the *Federal Register,* Vol. 67, No. 158, pp. 53334-53335. The agencies are preparing an EIS because of the level of interest expressed during scoping.

Issues

The scoping process was used to identify conflicts associated with the Proposed Action and to identify issues to use as a basis for developing alternatives. Comments that addressed the effects of

the Proposed Action were sorted into *primary issues*, discussed below.

Five primary issues were identified. They reflect conflicts between lynx conservation and alternative uses of natural resources.

1. Over-the-snow trails
Issue: What are the effects of limiting the growth of groomed or designated over-the-snow routes, on opportunities for over-the-snow recreation?

2. Wildland fire risk
Issue: What are the effects of the lynx amendment on the risks of wildland fire to communities?

3. Winter snow shoe hare habitat in multistoried forests
Issue: What is the effect on lynx of allowing projects in winter snowshoe hare habitat in multistoried forests?

4. Precommercial thinning
Issue: What are the effects of limiting precommercial thinning, on restoring tree species that are declining and on stand structures that are declining?

5. FWS Remand decision
Issue: What level of management direction should be applied to activities that the FWS remand notice found were not a threat to lynx populations?

The primary issues were used to develop alternatives to the Proposed Action that meet the Purpose and Need. Several *management concerns* were also identified as a basis for formulating alternatives.

Additional management concerns addressed in alternatives

Internal agency comments, as well as some public comments, expressed other concerns about the Proposed Action, largely involving procedural or administrative considerations rather than environmental consequences. Some people thought the Proposed Action would increase the complexity, cost or rigidity of management without comparable benefits for lynx. These concerns have been addressed by developing different language in alternatives. Such management concerns include:

- The scale of analysis imposed by Standards VEG S1 and HU S1;
- Standards that focus on particular methods, such as timber harvest and salvage logging;
- How denning habitat is considered;
- How lynx diurnal habitat is considered;
- How upgrading roads is considered; and
- How adaptive management is incorporated.

Alternatives considered in detail

The range of alternatives was determined by evaluating the comments and the Purpose and Need; and considering the level of scientific information available to warrant a different approach, the FWS Listing Decision and ESA requirements.

Within these parameters, the alternatives developed display a reasonable range to guide future projects, respond to the issues and meet the Purpose and Need. Five alternatives were developed in detail. Table Summary-1 shows the differences in management direction between the action alternatives, B, C, D and E.

- Alternative A is the no-action alternative. In this case, no action means no change, no amendment to existing plans to address new information about lynx.
- Alternative B, the Proposed Action, was developed from conservation measures recommended in the LCAS. Alternative B addresses activities on NF and BLM lands that can affect lynx and their habitat.
- Alternative C was designed to respond to issues of over-the-snow recreation management and foraging habitat in multistoried forests, while providing a comparable level of protection to lynx as Alternative B, the Proposed Action.
- Alternative D was designed to address the issues of managing over-the-snow recreation and multistoried forests, similar to Alternative C. Alternative D also allows some precommercial thinning in winter snowshoe hare habitat, but still contributes to lynx conservation.
- Alternative E addresses the issue of wildland fire risk while contributing to lynx conservation. It also responds to statements made in FWS's Remand Notice that grazing, minerals, forest roads and over-the-snow activities do not affect lynx populations.

Management direction considered, but not in detail

Some public comments gave suggestions for management direction that would have created other alternatives. A number of such alternatives to management direction were considered but dismissed from detailed consideration, for reasons summarized and discussed in the DEIS.

The rationale for not analyzing these alternatives in detail is based primarily on the narrowly defined Purpose and Need for the Proposed Action. Suggested alternatives were compared to the Proposed Action and the other fully developed alternatives, to see whether they represented a distinctly different approach but still met the Purpose and Need.

Based on this analysis, the following alternative direction was not considered in detail:

1) Proposed action used in scoping
2) Include a standard for type conversions
3) Limit the size of clearcuts and other regeneration-harvest units
4) Drop Standard VEG S1 that allows no more than 30 percent unsuitable habitat or change the percentage
5) Drop the 10 percent denning standard or increase it
6) Prohibit harvest in old growth or mature timber
7) Drop the criteria in VEG S4 that allow salvage logging

8) Add standards and guidelines to direct when and where wildland fire should be allowed to burn

9) Prohibit grazing on federal lands, add more standards about grazing or drop them

10) Remove all over-the-snow standards, let over-the-snow use increase, or further restrict or prohibit it

11) Include winter-logging road restrictions in the over-the-snow standard

12) Remove ski areas or don't let them expand

13) Ban road construction, provide more road-building restrictions, turn the roads guidelines into standards or drop the road-related guidelines

14) Limit road densities

15) Prohibit logging in lynx travel corridors

16) Establish only objectives for lynx management, not standards

17) Apply lynx conservation measures to areas that have not been mapped as lynx habitat or apply them only to occupied lynx habitat

18) Develop lease stipulations for oil and gas leasing

19) Move lynx into unoccupied habitat

20) Restrict hare hunting

21) Include all the recommendations in the LCAS.

Nature of effects

The amendment is programmatic in nature, consisting of direction that would be applied to future management activities. It does not prescribe site-specific activities on the ground, or irreversibly commit resources. CEQ regulations define *direct effects* as those occurring at the same time and place as the amendment. There are no direct environmental consequences of the amendment; therefore the analysis in the DEIS discusses only *indirect* and *cumulative* effects of the alternatives. Direct effects would result from site-specific projects, and will be evaluated when those decisions are made.

In analyzing effects, it's assumed the standards would be met because complying with standards is mandatory. The analysis of effects is based primarily on projections of how future activities and areas would change because of the proposed standards. Such projections are inherently uncertain.

It's also assumed that the objectives generally would be achieved and the guidelines generally followed, though that may not always be true.

The baseline for effects disclosed in this chapter is the existing plans. The effects of existing plans have been previously determined and disclosed. The DEIS describes changes in effects resulting from incorporating lynx conservation measures.

Generally, effects are presented as changes from existing plans, represented by Alternative A. Some effects on lynx are presented by comparing them to Alternative B, the Proposed Action, which was designed to conserve lynx. Cumulative effects include the effects of the existing plans as disclosed in accompanying NEPA documents and incorporated by reference.

Significance of effects

NEPA requires an EIS to be prepared for proposals that significantly affect the quality of the human environment. A DEIS was prepared based on the level of public interest for this amendment.

The overall effect of the action alternatives is to reduce the likelihood of effects from future projects. The analysis in the DEIS has not identified any environmental effects likely to be significant. The DEIS discloses indirect effects of not taking future actions.

Decision framework

The DEIS has been prepared to evaluate the effects of the Proposed Action, and to look at alternative ways of achieving the Purpose and Need, while responding to the primary issues and management concerns.

The responsible officials will decide whether or not to amend FS and BLM plans to incorporate direction for lynx conservation and recovery, and if so what that direction would contain.

Due to agency-specific planning regulations, the BLM and FS will publish separate decision documents for their respective amendments.

Responsible officials

Kathleen McAllister, Deputy Regional Forester for the Northern Region, has been directing the preparation of the DEIS. The responsible officials are:

- Brad Powell, Regional Forester, Northern Region, Region 1, PO Box 7669, Missoula, Montana 59807;
- Rick Cables, Regional Forester, Rocky Mountain Region, Region 2, PO Box 25127, Lakewood CO, 80225;
- Jack Troyer, Regional Forester, Intermountain Region, Region 4, Federal Building, 324 25th Street, Ogden, UT 84401;
- K. Lynn Bennett, State Director for Idaho BLM, 1387 South Vinnell Way, Boise, ID 83709; and
- Sally Wisely; State Director for Utah BLM, 324 South State Street, Salt Lake City, UT 84145.

Table Summary-1. Crosswalk between Alternative B, the Proposed Action, and the other action alternatives C, D & E

Differences between the alternatives have been *italicized*.

If a conflict exists between this management direction and an existing plan, the more restrictive direction applies.

Alternative B	Alternative C	Alternative D	Alternative E
ALL PROGRAMS & ACTIVITIES – applies to lynx habitat[19] in LAUs[17] & linkage areas[18]18, subject to valid existing rights			
Goal[12] Conserve the Canada lynx.	Same	Same	Same
Objective[25] ALL O1 Maintain[22] or restore[33] lynx habitat[19] connectivity[14] in and between LAUs[17], and in linkage areas[18].	Same	Same	Same
Standard[36] ALL S1 New or expanded permanent developments[28] and vegetation management projects[41] must maintain[22] habitat connectivity[14].	Same	Same	Same
Standard ALL S2 None	None	A project proposal that deviates from one or more lynx standards may proceed without amending the plan, subject to ESA requirements, if a written determination is made that the project is not likely to adversely affect lynx. The regional forester or BLM state director must approve any project proposed under this measure before the decision is made.	A project proposal that deviates from one or more lynx standards may proceed without amending the plan, subject to ESA requirements, *either:* *1.* If a written determination is made that the project is not likely to adversely affect lynx; or 2. *If it may result in short-term adverse effects on lynx but if long-term benefits to lynx and its habitat would result.*
Guideline[13] ALL G1 Methods to avoid or reduce effects on lynx should be used when constructing or reconstructing highways[15] or forest highways[10] across federal land. Methods could include fencing, underpasses or overpasses.	Same	Same	Same

Alternative B	Alternative C	Alternative D	Alternative E
SPECIFIC PROGRAMS & ACTIVITIES – applies only to lynx habitat [19] in LAUs[17], subject to valid existing rights			
LAU boundaries			
Standard[36] LAU S1 LAU[17] boundaries will not be adjusted except through agreement with the FWS, based on new information about lynx habitat[19].	Same	Same	Same
Vegetative management activities & practices			
Objective[25] VEG O1 Manage vegetation to be more similar to historic succession and disturbance processes while maintaining habitat components necessary for the conservation of lynx.	Same	Same	Same
Objective VEG O2 Maintain or improve lynx habitat[19], emphasizing high-quality winter snowshoe hare habitat[42] near denning habitat[4].	Same	Same	Same
Objective VEG O3 Conduct fire use[9] activities to restore[33] ecological processes and maintain or improve lynx habitat.	Same	Same	Same
Objective VEG O4 Design regeneration harvest, reforestation and thinning to develop characteristics suitable for winter snowshoe hare habitat.	Same	Same	Same

Alternative B	Alternative C	Alternative D	Alternative E
Standard[36] VEG S1 Unless a broad scale assessment[2] has been completed that substantiates different historic levels of unsuitable habitat[20], limit disturbance in each LAU[17] as follows: If more than 30 percent of the lynx habitat[19] in an LAU is currently in unsuitable condition, no additional habitat may be made unsuitable by vegetation management projects[41].	Standard VEG S1 Unless a broad scale assessment has been completed that substantiates different historic levels of unsuitable habitat, limit disturbance in each LAU *or in a combination of immediately adjacent LAUs* as follows: If more than 30 percent of the lynx habitat in an LAU *or a combination of immediately adjacent LAUs* is currently in unsuitable condition, no additional habitat may be made unsuitable by vegetation management projects. This standard does not apply to prescribed fire[29]. *Use the same analysis boundaries for all vegetation management projects subject to this standard.*	Standard VEG S1 Unless a broad scale assessment has been completed that substantiates different historic levels of unsuitable habitat, limit disturbance in *each sub-basin or isolated mountain range*[16] as follows: If more than 30 percent of the lynx habitat *in a sub-basin or isolated mountain range* is currently in unsuitable condition, no additional habitat may be made unsuitable by vegetation management projects. Use the same analysis boundaries for all vegetation management projects subject to this standard.	Standard VEG S1 Unless a broad scale assessment has been completed that substantiates different historic levels of unsuitable habitat, limit disturbance in each LAU *or in a combination of immediately adjacent LAUs* as follows: If more than 30 percent of the lynx habitat in an LAU *or a combination of immediately adjacent LAUs* is currently in unsuitable condition, no additional habitat may be made unsuitable by vegetation management projects. *This standard does not apply to fuel treatment[11] projects identified through processes such as that described in A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan.* Use the same analysis boundaries for all vegetation management projects subject to this standard.
Standard VEG S2 Timber management projects[39] shall not change more than 15 percent of the lynx habitat on NFS or BLM lands in an LAU to an unsuitable condition in a ten-year period.	*None* *See Guideline VEG G6*	*None*	None
Standard VEG S3 Maintain[22] at least ten percent of the lynx habitat in an LAU as denning habitat[4] in patches generally larger than five acres.	Same as Alt B	Standard VEG S3 Maintain at least ten percent of the lynx habitat in an LAU as denning habitat in patches generally larger than five acres.	Standard VEG S3 Maintain at least ten percent of the lynx habitat in an LAU as denning habitat in patches generally larger than five acres.

Alternative B	Alternative C	Alternative D	Alternative E
Where less than ten percent denning habitat is present in an LAU, defer vegetation management projects in stands that have the highest potential to develop denning habitat.		Where less than ten percent denning habitat is present in an LAU, *either:* *1.* Defer vegetation management projects in stands that have the highest potential to develop denning habitat; *or* *2. Move towards ten percent denning habitat by leaving enough standing trees and coarse woody debris to be similar to what would be there naturally.*	Where less than ten percent denning habitat is present in an LAU, either: 1. Defer vegetation management projects in stands that have the highest potential to develop denning habitat; or 2. Move towards ten percent denning habitat by leaving enough standing trees and coarse woody debris to be similar to what would be there naturally. *This standard does not apply to fuel treatment projects identified through processes such as that described in A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan.*
Standard VEG S4 After a disturbance kills trees in areas five acres or smaller that could contribute to lynx denning habitat, salvage harvest[34] may occur only in: 1. Developed recreation[7] sites, administrative sites, or authorized special use structures or improvements; or 2. Designated road or trail corridors where public safety or access has been or may be compromised; or 3. LAUs where denning habitat has been mapped and field-validated, provided at least ten percent is retained and well distributed.	Standard VEG S4 After a disturbance kills trees in areas five acres or smaller that could contribute to lynx denning habitat, salvage harvest may occur only in: 1. Developed recreation sites, administrative sites, or authorized special use structures or improvements; or *2.* Designated road or trail corridors where public safety or access has been or may be compromised; or 3. LAUs where denning habitat has been mapped and field-validated, provided at least ten percent is retained and well distributed; or 4. *Within 200 feet of dwellings or outbuildings.*	*None* *See Guideline VEG G7*	None See Guideline VEG G7

Alternative B

Standard VEG S5

Precommercial thinning[30] projects that reduce winter snowshoe hare habitat[42] during the stand initiation structural stage[37] may occur only:

1. Within 200 feet of administrative sites, dwellings or outbuildings.

NOTE: Some thinning projects, such as white pine pruning or Christmas tree harvest, may occur if winter snowshoe hare habitat is not reduced.

Alternative C

Standard VEG S5

Vegetation management projects that reduce winter snowshoe hare habitat during the stand initiation structural stage may occur only:

1. Within 200 feet of administrative sites, dwellings or outbuildings; or
2. *For research studies[32] or genetic tree tests evaluating genetically improved reforestation stock.*

NOTE: Some vegetation management projects, such as white pine pruning or Christmas tree harvest, may occur if winter snowshoe hare habitat is not reduced.

Alternative D

Standard VEG S5

Vegetation management projects that reduce winter snowshoe hare habitat during the stand initiation structural stage may occur only:

1. Within 200 feet of administrative sites, dwellings or outbuildings; or
2. For research studies or genetic tree tests evaluating genetically improved reforestation stock; or
3. *For daylight thinning[3] of planted rust-resistant white pine where 80 percent of the winter snowshoe hare habitat is retained; or*
4. *To restore[33] whitebark pine; or*
5. *For daylight thinning to release larch or ponderosa pine where 80 percent of the winter snowshoe hare habitat is retained; or*
6. *To develop future old growth[27] characteristics in lodgepole; or*
7. *When a broad scale assessment[2] determines that the amount winter snowshoe hare habitat in the stand initiation stage exceeds what would be expected under the normal range of historic conditions; or*
8. *For conifer removal in aspen or daylight thinning around individual aspen trees.*

NOTE: Appendix G includes examples of 3, 5, 6 and 7.

Alternative E

Standard VEG S5

Precommercial thinning[30] projects that reduce winter snowshoe hare habitat during the stand initiation structural stage may occur only:

1. Within 200 feet of administrative sites, dwellings or outbuildings; or
2. For research studies or genetic tree tests evaluating genetically improved reforestation stock; or
3. *For fuel treatment projects identified through processes such as that described in A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan.*

Alternative B

Standard VEG S6

Precommercial thinning projects that reduce winter snowshoe hare habitat during the understory-reinitiation[40] or old-multistory structural stages[26] may occur only:

1. Within 200 feet of administrative sites, dwellings or outbuildings.

Alternative C

Standard VEG S6

Vegetation management projects[41] that reduce winter snowshoe hare habitat during the understory-reinitiation or old-multistory structural stages may occur only:

1. Within 200 feet of administrative sites, dwellings or outbuildings; or
2. For research studies[32].

Alternative D

Standard VEG S6

Vegetation management projects that reduce winter snowshoe hare habitat during the understory-reinitiation or old-multistory structural stages may occur only:

1. Within 200 feet of administrative sites, dwellings or outbuildings; or
2. For research studies; or
3. *To maintain planted rust-resistant white pine where 80 percent of the winter snowshoe hare habitat is retained; or*
4. *To restore whitebark pine; or*
5. *To release larch or ponderosa pine where 80 percent of the winter snowshoe hare habitat is retained; or*
6. *To develop future old growth characteristics in lodgepole; or*
7. *When a broad scale assessment[2] determines that the amount of winter snowshoe hare habitat in multistory structural stages exceeds what would be expected under the normal range of historic conditions.*
8. *When improving or maintaining winter snowshoe hare habitat in the long term.*

NOTE: Appendix G includes examples of 3, 5 and 6.

Alternative E

None

See Guideline VEG G8

Alternative B	Alternative C	Alternative D	Alternative E
Guideline[13] VEG G1 Vegetation management projects[41] should be planned to recruit a high density of conifers, hardwoods and shrubs where such habitat is scarce or not available. Winter snowshoe hare habitat [42] should be near denning habitat[4]. Vegetation management projects should be planned to extend the production of winter snowshoe hare habitat when forage quality and quantity is declining.	Guideline VEG G1 Vegetation management projects should be planned to recruit a high density of conifers, hardwoods and shrubs where such habitat is scarce or not available *Priority should be given to stem-exclusion, closed-canopy structural stage[38].* Winter snowshoe hare habitat should be near denning habitat. Vegetation management projects should be planned to extend the production of winter snowshoe hare habitat when forage quality and quantity is declining.	Same as Alt C	Same as Alt C
Guideline VEG G2 Where more denning habitat is desired, leave standing trees and coarse woody debris in amounts similar to what would be there naturally. Denning habitat should be near winter snowshoe hare habitat.	Same	*None* *See Standard VEG S3*	None See Standard VEG S3
Guideline VEG G3 Vegetation management projects designed to retain or restore[33] denning habitat should be located where there is a low probability of stand-replacing fire.	Same	Same	Same
Guideline VEG G4 Fire use[9] activities should not create permanent travel routes that facilitate snow compaction. Constructing permanent firebreaks on ridges or saddles should be avoided.	Same	Same	Same

Alternative B	Alternative C	Alternative D	Alternative E
Guideline VEG G5 Habitat for alternate prey species, primarily red squirrel[31], should be provided in each LAU.	Same	Same	Same
None See Standard VEG S2	*Guideline VEG G6* *Timber management projects[39] should not change more than 15 percent of the lynx habitat in an LAU into an unsuitable condition during a ten-year period.*	*None*	None
None See Standard VEG S4	None See Standard VEG S4	*Guideline VEG G7* *After a disturbance that kills trees in areas five acres or smaller which could contribute to lynx denning habitat, salvage harvest[34] should not occur unless at least ten percent denning habitat in an LAU is retained and well distributed.*	Same as Alt D
None See Standard VEG S6	None See Standard VEG S6	None See Standard VEG S6	Guideline VEG G8 *Vegetation management projects[41] should provide habitat conditions through time that maintain[22] winter snowshoe hare habitat[42] during the understory reinitiation[40] or old-multistory structural stages. Vegetation management projects should be used to improve winter snowshoe hare habitat where dense understories are lacking.*

Alternative B	Alternative C	Alternative D	Alternative E
Livestock grazing activities & practices			
Objective[25] GRAZ O1 Manage livestock grazing to be compatible with improving or maintaining[22] lynx habitat[19].	Same	Same	Same
Standard[36] GRAZ S1 In fire- and harvest-created openings, manage livestock grazing to make sure impacts do not prevent shrubs and trees from regenerating.	Same	Same	*None* *See Guideline GRAZ G1*
Standard GRAZ S2 In aspen stands, manage livestock grazing to contribute to their long-term health and sustainability.	Same	Same	*None* *See Guideline GRAZ G2*
Standard GRAZ S3 In riparian areas and willow carrs, manage livestock grazing to contribute to maintaining or achieving a preponderance of mid- or late-seral stages[24], similar to conditions that would have occurred under historic disturbance regimes.	Same	Same	*None* *See Guideline GRAZ G3*
Standard GRAZ S4 In shrub-steppe habitats[35], manage livestock grazing in the elevation ranges of forested lynx habitat[19] in LAUs[17], to contribute to maintaining or achieving a preponderance of mid- or late-seral stages, similar to conditions that would have occurred under historic disturbance regimes.	Same	Same	*None* *See Guideline GRAZ G4*

Alternative B	Alternative C	Alternative D	Alternative E
None See Standard GRAZ S1	Same	Same	Guideline[13] GRAZ G1 *In fire- and harvest-created openings, livestock grazing should be managed so that impacts do not prevent shrubs and trees from regenerating.*
None See Standard GRAZ S2	Same	Same	Guideline GRAZ G2 *In aspen stands, livestock grazing should be managed to contribute to their long-term health and sustainability.*
None See Standard GRAZ S3	Same	Same	Guideline GRAZ G3 *In riparian areas and willow carrs, livestock grazing should be managed to contribute to maintaining or achieving a preponderance of mid- or late-seral stages[24], similar to conditions that would have occurred under historic disturbance regimes.*
None See Standard GRAZ S4	Same	Same	Guideline GRAZ G4 *In shrub-steppe habitats[35], livestock grazing should be managed in the elevation ranges of forested lynx habitat in LAUs, to contribute to maintaining or achieving a preponderance of mid- or late-seral stages, similar to conditions that would have occurred under historic disturbance regimes.*

Alternative B	Alternative C	Alternative D	Alternative E
Human uses management activities & practices			
Objective[25] HU O1 Maintain[22] the lynx's natural competitive advantage over other predators in deep snow, by discouraging the expansion of snow-compacting activities in lynx habitat[19].	Same	Same	Same
Objective HU O2 Manage recreational activities to maintain lynx habitat and connectivity.	Same	Same	Same
Objective HU O3 Concentrate activities in existing developed areas, rather than developing new areas in lynx habitat.	Same	Same	Same
Objective HU O4 Provide for lynx habitat needs and connectivity when developing new or expanding existing developed recreation[7] sites or ski areas.	Same	Same	Same
Objective HU O5 Manage human activities – such as exploring and developing minerals and oil and gas, placing utility corridors and permitting special uses – to reduce impacts on lynx and lynx habitat.	Same	Same	Same
Objective HU O6 Reduce adverse highway[15] effects on lynx by working cooperatively with other agencies to provide for lynx movement and habitat connectivity[14], and to reduce the potential of lynx mortality.	Same	Same	Same

Alternative B	Alternative C	Alternative D	Alternative E
Standard[36] HU S1 Allow no net increase in designated over-the-snow routes[5] or play areas by LAU[17], unless designation serves to consolidate use and improve lynx habitat[19]. This does not apply inside permitted ski area boundaries, to winter logging, to rerouting trails for public safety, to accessing private inholdings or where regulated by HU S3.	Standard HU S1 Allow no net increase in designated over-the-snow routes or play areas *outside baseline areas of consistent snow compaction*[1] by LAU *or in a combination of immediately adjacent LAUs*, unless designation serves to consolidate use and improve lynx habitat. This does not apply inside permitted ski area boundaries, to winter logging, to rerouting trails for public safety, to accessing private inholdings or to access regulated by HU S3. *Use the same analysis boundaries for all actions subject to this standard.*	Same as Alt C	*None* *See Guideline HU G11*
Standard HU S2 When developing or expanding ski areas, locate trails, access roads and lift termini to maintain[22] and provide lynx diurnal security habitat[8] if it's been identified as a need.	*None* *See Guideline HU G10*	None See Guideline HU G10	None See Guideline HU G10
Standard HU S3 Winter access for non-recreation special uses and mineral and energy exploration and development, shall be limited to designated routes[6] or designated over-the-snow routes[5].	Same	Same	*See Guideline HU G12*
Guideline[13] HU G1 When developing or expanding ski areas, provisions should be made for adequately sized inter-trail islands that include coarse woody debris, so winter snowshoe hare habitat[42] is maintained.	Same	Same	Same

Alternative B	Alternative C	Alternative D	Alternative E
Guideline HU G2 When developing or expanding ski areas, nocturnal foraging should be provided consistent with the ski area's operational needs, especially where lynx habitat occurs as narrow bands of coniferous forest across mountain slopes.	Same	Same	Same
Guideline HU G3 Recreation developments and operations should be planned in ways that both provide for lynx movement and maintain the effectiveness of lynx habitat.	Same	Same	Same
Guideline HU G4 For mineral and energy development sites and facilities, remote monitoring should be encouraged to reduce snow compaction.	Same	Same	Same
Guideline HU G5 For mineral and energy development sites and facilities that are closed, a reclamation plan that restores[33] lynx habitat should be developed.	Same	Same	Same
Guideline HU G6 Upgrading unpaved roads to maintenance levels[23] 4 and 5 should be avoided in lynx habitat, if the result would be increased traffic speeds and volumes, or a foreseeable contribution to increases in human activity or development.	Guideline HU G6 *Methods to avoid or reduce effects on lynx should be used in lynx habitat when* upgrading unpaved roads to maintenance levels 4 or 5, if the result would be increased traffic speeds and volumes, or a foreseeable contribution to increases in human activity or development.	Same as Alt C	Same as Alt C

Alternative B	Alternative C	Alternative D	Alternative E
Guideline HU G7 New permanent roads should not be built on ridge-tops and saddles, or in areas identified as important for lynx habitat connectivity[14]. New permanent roads and trails should be situated away from forested stringers.	Same	Same	Same
Guideline HU G8 Cutting brush along low-speed[21], low-traffic-volume roads should be done to the minimum level necessary to provide for public safety.	Same	Same	Same
Guideline HU G9 On new roads built for projects, public motorized use should be restricted. Effective closures should be provided in road designs. When the project is over, these roads should be reclaimed or decommissioned, if not needed for other management objectives.	Same	Same	Same
None See Standard HU S2	*Guideline HU G10* *When developing or expanding ski areas and trails, access roads and lift termini should be located to maintain and provide lynx diurnal security[8] habitat.*	Same as Alt C	Same as Alt C

Alternative B	Alternative C	Alternative D	Alternative E
None See Standard HU S1	Same	Same	Guideline HU G11 *Designated over-the-snow routes[5] or play areas should not expand outside baseline areas of consistent snow compaction[1] by LAU or in a combination of immediately adjacent LAUs, unless designation serves to consolidate use and improve lynx habitat.* *This does not apply inside permitted ski area boundaries, to winter logging, to rerouting trails for public safety, to accessing private inholdings or where regulated by HU G12.* *Use the same analysis boundaries for all actions subject to this guideline.*
None See Standard HU S3	Same	Same	Guideline HU G12 *Winter access for non-recreation special uses and mineral and energy exploration and development, should be limited to designated routes[6] or designated over-the-snow routes[5]*

Alternative B	Alternative C	Alternative D	Alternative E
LINKAGE AREAS – applies to linkage areas[18], subject to valid existing rights			
Objective[25] LINK O1 In areas of intermingled land ownership, work with landowners to pursue conservation easements, habitat conservation plans, land exchanges or other solutions to reduce the potential of adverse impacts on lynx and lynx habitat.	Same	Same	Same
Standard[36] LINK S1 When highway[15] or forest highway[10] construction or reconstruction is proposed in linkage areas[18], identify potential highway crossings.	Same	Same	Same
Standard LINK S2 Manage livestock grazing in shrub-steppe habitats[35] to contribute to maintaining[22] or achieving a preponderance of mid- or late-seral stages[24], similar to conditions that would have occurred under historic disturbance regimes.	Same	Same	*None* *See Guideline LINK G2*
Guideline[13] LINK G1 NFS and BLM lands should be retained in public ownership.	Same	Same	Same
None See Standard LINK S2	Same	Same	Guideline LINK G2 *Livestock grazing in shrub-steppe habitats should be managed to contribute to maintaining or achieving a preponderance of mid- or late-seral stages[24], similar to conditions that would have occurred under historic disturbance regimes.*

Alternative B	Alternative C	Alternative D	Alternative E
Monitoring			
Map the location and amount of snow-compacting use that coincided with lynx habitat[19] in LAUs[17] during the 1998-2000 seasons for designated over-the-snow[5] and groomed routes and areas, and areas of consistent snow compaction[1]. Such activities include snowmobiling, snowshoeing, cross-country skiing, dog sledding, etc.	Same as Alt B	Same as Alt B	Same as Alt B
None	None	*Annually monitor the acres of vegetation management projects[41] that occurred in lynx habitat and in winter snowshoe hare habitat[42] during the previous fiscal year.*	Same as Alt D
None	None	*Document and evaluate the conditions under which Standard All S2 is applied.*	Same as Alt D

Glossary

[1] *Areas of consistent snow compaction* – An area of consistent snow compaction is an area of land or water that during winter is generally covered with snow and gets enough human use that individual tracks are indistinguishable. In such places, compacted snow is evident most of the time, except immediately after (within 48 hours) snowfall. These can be areas or linear routes, and are generally found in near snowmobile or cross-country ski routes, in adjacent openings, parks and meadows, near ski huts or plowed roads, or in winter parking areas. Areas of consistent snow compaction will be determined based on the area or miles used in 1998, 1999 or 2000.

[2] *Broad scale assessment* – A broad scale assessment is a synthesis of current scientific knowledge, including a description of uncertainties and assumptions, to provide an understanding of past and present conditions and future trends, and a characterization of the ecological, social and economic components of an area. (LCAS)

[3] *Daylight thinning* – Daylight thinning is a form of precommercial thinning that removes the trees and brush inside a given radius around a tree.

[4] *Denning habitat (lynx)* – Denning habitat is the environment lynx use when giving birth and rearing kittens until they are mobile. The most common component is large amounts of coarse woody debris to provide escape and thermal cover for kittens. Denning habitat must be within daily travel distance of winter snowshoe hare habitat – the typical maximum daily distance for females is

about three to six miles. Denning habitat includes mature and old growth[24] forests with plenty of coarse woody debris. It can also include young regenerating forests with piles of coarse woody debris, or areas where down trees are jack-strawed.

[5] *Designated over-the-snow routes* – Designated over-the-snow routes are routes managed under permit or agreement or by the agency, where use is encouraged, either by on-the-ground marking or by publication in brochures, recreation opportunity guides or maps (other than travel maps) or in electronic media produced or approved by the agency. The routes identified in outfitter and guide permits are designated by definition; groomed routes also are designated by definition. The determination of baseline snow compaction will be based on the miles of designated over-the-snow routes authorized, promoted or encouraged in 1998, 1999 or 2000.

[6] *Designated route* – A designated route is a road or trail that has been identified as open for specified travel use.

[7] *Developed recreation* – Developed recreation requires facilities that result in concentrated use. For example, skiing requires lifts, parking lots, buildings and roads; campgrounds require roads, picnic tables and toilet facilities.

[8] *Diurnal security habitat (lynx)* – Diurnal security habitat amounts to places in lynx habitat that provide secure winter daytime bedding sites for lynx in highly disturbed landscapes like ski areas. Security habitat gives lynx the ability to retreat from human disturbance during the day, so they can emerge at dusk to hunt when most human activity stops. Forest structures that make human access difficult generally discourage human activity in security habitats. Security habitats are most effective if big enough to provide visual and acoustic insulation and to let lynx easily move away from any intrusion. They must be close to winter snowshoe hare habitat. (LCAS)

[9] *Fire use* – Fire use is the combination of wildland fire use and using prescribed fire to meet resource objectives. (NIFC) Wildland fire use is managing naturally ignited wildland fires to accomplish resource management objectives in areas that have a fire management plan. This term replaces prescribed natural fire. (Wildland and Prescribed Fire Management Policy, August 1998)

[10] *Forest highway* – A forest highway is a forest road under the jurisdiction of, and maintained by, a public authority and open to public travel (USC: Title 23, Section 101(a)), designated by an agreement with the FS, state transportation agency and Federal Highway Administration.

[11] *Fuel treatment* – A fuel treatment is a management action that reduces the threat of ignition and fire intensity or rate of spread, or is used to restore fire-adapted ecosystems.

[13] *Goal* – A goal is a broad description of what an agency is trying to achieve, found in a land management plan. (LCAS)

Guideline – A guideline is a particular management action that should be used to meet an objective found in a land management plan. The rationale for deviations may be documented, but amending the plan is not required. (LCAS modified)

[14] *Habitat connectivity (lynx)* – Habitat connectivity consists of an adequate amount of vegetative cover arranged in a way that allows lynx to move around. Narrow forested mountain ridges or shrub-steppe plateaus may serve as a link between more extensive areas of lynx habitat; wooded riparian areas may provide travel cover across open valley floors. (LCAS)

[15] *Highway* – The word highway includes all roads that are part of the National Highway System. (23 CFR 470.107(b))

[16] *Isolated mountain range* – Isolated mountain ranges are small mountains cut off from other mountains and surrounded by flatlands. On the east side of the Rockies, they are used for analysis instead of sub-basins. Examples are the Little Belts in Montana and the Bighorns in Wyoming.

[17] *LAU (Lynx Analysis Unit)* – An LAU is an area of at least the size used by an individual lynx, from about 25 to 50 mi2 (LCAS). An LAU is a unit for which the effects of a project would be analyzed; its boundaries should remain constant.

[18] *Linkage area* – A linkage area provides connectivity between blocks of lynx habitat. Linkage areas occur both within and between geographic areas, where basins, valleys or agricultural lands separate blocks of lynx habitat, or where lynx habitat naturally narrows between blocks. (LCAS updated definition approved by the Steering Committee 10/23/01)

[19] *Lynx habitat* – Lynx habitat occurs in mesic coniferous forest that experience cold, snowy winters and provide a prey base of snowshoe hare. In the northern Rockies, lynx habitat is generally occurs between 3,500 and 8,000 feet of elevation, and primarily consists of lodgepole pine, subalpine fir and Engelmann spruce. It may consist of cedar-hemlock in extreme northern Idaho, northeastern Washington and northwestern Montana, or of Douglas fir on moist sites at higher elevations in central Idaho. It may also consist of cool, moist Douglas fir, grand fir, western larch and aspen when interspersed in subalpine forests. Dry forests do not provide lynx habitat. (LCAS)

[20] *Lynx habitat in an unsuitable condition* –Lynx habitat in an unsuitable condition consists of lynx habitat in the stand initiation structural stage where the trees are generally less than ten to 30 years old and have not grown tall enough to protrude above the snow during winter. Stand replacing fire or certain vegetation management projects can create unsuitable conditions. Vegetation management projects that can result in unsuitable habitat include clearcuts and seed tree harvest, and sometimes shelterwood cuts and commercial thinning depending on the resulting stand composition and structure. (LCAS)

[21] *Low-speed, low-traffic-volume road* – Low speed is less than 20 miles per hour; low volume is a seasonal average daily traffic load of less than 100 vehicles per day.

[22] *Maintain* – In the context of this amendment, to maintain means to provide enough lynx habitat to conserve lynx. It does not mean to keep the status quo.

[23] *Maintenance level* – Maintenance levels define the level of service provided by and maintenance required for a road. (FSH 7709.58, Sec 12.3) Maintenance level 4 is assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. Some may be single lane; some may be paved or have dust

abated. Maintenance level 5 is assigned to roads that provide a high degree of user comfort and convenience. Normally, roads are double-lane and paved, but some may be aggregate surfaced with the dust abated.

[24] *Mid-seral or later* – Mid-seral is the successional stage in a plant community that's the midpoint as it moves from bare ground to climax. For riparian areas, it means willows or other shrubs have become established. For shrub-steppe areas, it means shrubs associated with climax are present and increasing in density.

[25] *Objective* – An objective is a statement in a land management plan describing desired resource conditions and intended to promote achieving programmatic goals. (LCAS)

[26] *Old multistory structural stage* – Many age classes and vegetation layers mark the old forest, multistoried stage. It usually contains large old trees. Decaying fallen trees may also be present that leave a discontinuous overstory canopy. On cold or moist sites without frequent fires or other disturbance, multi-layer stands with large trees in the uppermost layer develop. (Oliver and Larson, 1996)

[27] *Old growth* – Old growth forests generally contain trees that are large for their species and site, and are sometimes decadent with broken tops. Old growth often contains a variety of tree sizes, large snags and logs, and a developed and often patchy understory.

[28] *Permanent development* – A permanent development is any development that results in a loss of lynx habitat for at least 15 years. Ski trails, parking lots, new permanent roads, structures, campgrounds and many special use developments would be considered permanent developments.

[29] *Prescribed fire* – A prescribed fire is any fire ignited as a management action to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements met, before ignition. The term replaces management ignited prescribed fire. (NWCG)

[30] *Precommercial thinning* – Precommercial thinning is mechanically removing trees to reduce stocking and concentrate growth on the remaining trees, and not resulting in immediate financial return. (Dictionary of Forestry)

[31] *Red squirrel habitat* – Red squirrel habitat consists of coniferous forests of seed and cone-producing age that usually contain snags and downed woody debris, generally associated with mature or older forests.

[32] *Research* – Research consists of studies conducted to increase scientific knowledge or technology. For the purposes of Standards VEG S5 and VEG S6, research applies to studies financed from the forest research budget (FSM 4040) and administrative studies financed from the NF budget.

[33] *Restore, restoration* – To restore is to return or re-establish ecosystems or habitats to their original structure and species composition. (Dictionary of Forestry)

[34] *Salvage harvest* – Salvage harvest is a commercial timber sale of dead, damaged or dying trees. It recovers economic value that would otherwise be lost. Collecting firewood for personal use is not considered salvage harvest.

[35] *Shrub steppe habitat* – Shrub steppe habitat consists of dry sites with shrubs and grasslands intermingled.

[36] *Standard* – A standard is a required action in a land management plan specifying how to achieve an objective or under what circumstances to refrain from taking action. A plan must be amended to deviate from a standard.

[372] *Stand initiation structural stage* – The stand initiation stage generally develops after a stand-replacing disturbance by fire or regeneration timber harvest. A new single-story layer of shrubs, tree seedlings and saplings establish and develop, reoccupying the site. Trees that need full sun are likely to dominate these even-aged stands. (Oliver and Larson, 1996)

[38] *Stem exclusion structural stage* – In the stem exclusion stage, trees initially grow fast and quickly occupy all of the growing space, creating a closed canopy. Because the trees are tall, little light reaches the forest floor so understory plants (including smaller trees) are shaded and grow more slowly. Species that need full sunlight usually die; shrubs and herbs may become dormant. New trees are precluded by a lack of sunlight or moisture. (Oliver and Larson, 1996)

[39] *Timber management* – Timber management consists of growing, tending, commercially harvesting and regenerating crops of trees.

[40] *Understory re-initiation structural stage* – In the understory re-initiation stage, a new age class of trees gets established after overstory trees begin to die, are removed or no longer fully occupy their growing space after tall trees abrade each other in the wind. Understory seedlings then re-grow and the trees begin to stratify into vertical layers. A low to moderately dense uneven-aged overstory develops, with some small shade-tolerant trees in the understory. (Oliver and Larson, 1996)

[41] *Vegetation management projects* – Vegetation management projects change the composition and structure of vegetation to meet specific objectives, using such means as prescribed fire and timber harvest. For the purposes of this amendment, the term does not include removing vegetation for permanent developments like mineral operations, ski runs, roads and the like, and does not apply to fire suppression or to wildland fire use.

[42] *Winter snowshoe hare habitat* – Winter snowshoe hare habitat consists of places where young trees or shrubs grow dense – thousands of woody stems per acre – and tall enough to protrude above the snow during winter, so hares can browse on the bark and small twigs (Ruediger et al. 2000). Winter snowshoe hare habitat develops primarily in the stand initiation, understory reinitiation and old forest multistoried structural stages.

Comparing alternatives

Table Summary-2. Comparing how the alternatives address the issues

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Issue: Effect on over-the-snow winter recreation				
Ability to expand groomed routes				
Grooming could expand under direction in existing plans • Grooming levels were stable during the 1990s & are not likely to increase during the next 5 years due to increased costs of machinery & operations, & no increases in funding from states	Grooming could expand on about 3,500 miles of designated ungroomed routes, except additional grooming limited • On designated ungroomed routes on the Flathead, Gallatin, Targhee & Ashley NF & the Upper Columbia/Salmon BLM unit, because most designated routes are currently groomed	Grooming could expand • On about 3,500 miles of designated ungroomed routes • In areas of consistent snow compaction	Same as Alternative C	Same as Alternative C
Ability to expand designated routes				
• Designated ungroomed routes could expand based on existing plan direction • For outfitter-guide permits, changes in season of use are possible, but there's little ability to expand because of permitting process	• New designated routes would not be allowed above what exists today • For outfitter-guide permits, changes in season of use would be limited • For outfitter-guide permits, little ability to expand would be found anyway because of permitting process	• New designated routes would be allowed in areas of consistent snow compaction • For outfitter-guide permits, changes in season of use would be possible in areas of consistent snow compaction, but there's little ability to expand because of permitting process	Same as Alternative C	Same as Alternative C

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Effect on over-the-snow recreation				
No change in over-the-snow winter recreation	• Present opportunities would continue to exist • In the few units where grooming cannot expand, user experience may change • Outfitters could not expand winter operations into new areas	• Present opportunities would continue to exist • All units would be able to provide more groomed routes & opportunities, so user experience should not change • Outfitters could expand services into some new areas	Same as Alternative C	Same as Alternative C

Comparing how the alternatives address the issue

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Issue: Effects on wildland fire risk to communities				
Limits imposed on fuel treatments that reduce winter snowshoe hare habitat				
Direction in existing plans	Precommercial thinning allowed only • Within 200 feet of structures	Fuel treatment projects allowed only • Within 200 feet of structures	Fuel treatment projects allowed only • Within 200 feet of structures • When a broad scale assessment finds different historic forage levels • To maintain or improve foraging habitat in the long term	Direction in existing plans
Ability to conduct fuel treatments **outside** winter snowshoe hare habitat				
Direction in existing plans	Standards VEG S1 through VEG S4 could limit fuel treatment in some circumstances – most projects could be designed to meet the standards			Direction in existing plans
Percent of fuel treatment program **inside** the WUI that may need to be relocated during next decade due Standards VEG S5 & VEG S6				
None	• 5% in high density forests • 4% in low density forests	• 10% in high density forests • 9% in low density forests	• Less than Alternative C • Less than Alternative C	None
Percent of fuel treatment program **outside** the WUI that may need to be relocated during next decade due Standards VEG S5 & VEG S6				
None	• 8% in high density forests • 7% in low density forests	• 17% in high density forests • 13% in low density forests	• Less than Alternative C • Less than Alternative C	None
Effect on wildland fire risk				
No change	• Constrains only fuel treatments that use precommercial thinning • Could displace 6-11% of the fuel treatment program • May limit ability to reduce fire size and intensity in some places	• Constrains fuel treatments • Could displace 12-22% of the fuel treatment program • Likely to limit ability to reduce fire size and intensity in some places	• Constrains fuel treatments • Could displace 12-22% of the fuel treatment program • Likely to limit ability to reduce fire size and intensity in some places	• Would not constrain fuel treatment • Would not limit ability to reduce fire size and intensity

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Issue: Effects on maintaining winter snowshoe hare habitat in multistoried forests				
Activities **allowed** in lynx foraging habitat in multistoried forests outside wilderness				
Direction in existing plans	Vegetation management projects other than precommercial thinning • But precommercial thinning permitted within 200 feet of structures	Only vegetation management projects • Within 200 feet of structures or for research	Only vegetation management projects • Within 200 feet of structures or for research • To restore planted white pine, western larch, ponderosa pine & whitebark pine where 80% of the forage habitat is retained • To restore whitebark pine • To develop future old growth lodgepole pine • When a broad scale assessment finds different historic forage levels • To maintain or improve foraging habitat in the long term	Vegetation management projects • To maintain or improve foraging habitat in the long term • Where there is rationale to deviate from the guideline
Effect on winter snowshoe hare habitat in multistoried forests outside wilderness				
May be reduced by 4-5%	May be reduced by 3-4%	No reduction, forage habitat maintained	May be reduced by 2-3%, plus some habitat improved.	May be reduced by 4-5% plus some habitat improved

Comparing how the alternatives address the issue

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Issue: Effect on the ability to restore tree species and forest structures in decline				
Ability to precommercially thin young regenerating forests to maintain or restore tree species in decline				
Direction in existing plans	Only when stands no longer provide foraging habitat, or • Within 200 feet of structures	Same as Alternative B, plus • Research & genetic tests	Same as Alternative C, plus • Daylight thinning around planted white pine, western larch & ponderosa pine retaining 80% of forage habitat • Restoring whitebark pine & aspen • Thinning lodgepole pine to promote future old growth • When a broad scale assessment finds different historic forage levels	Same as Alternative C, plus • Fuel treatments developed through a collaborative process

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Precommercial thinning deferred by amendment during next decade, based on historic average funding of about 34% of what's requested				
No deferral	132,000 acres	Same as Alternative B	56,000 acres	Same as Alternative B
Effect on tree species in decline				
♦ Data collected for research & tree improvement ♦ Contributes to improving conditions for whitebark pine & aspen ♦ Contributes to improving conditions for western white pine, western larch, ponderosa pine & old growth lodgepole	♦ No data collected for research & tree improvement ♦ Contributes to continued decline of western white pine, whitebark pine, aspen, western larch & ponderosa pine ♦ Contributes to decrease in old growth lodgepole pine	Same as Alternative B, only ♦ Data is collected for research & tree improvement	♦ Data collected for research & tree improvement ♦ Contributes to improving conditions for whitebark pine & aspen ♦ Contributes to improving conditions for western white pine, western larch, ponderosa pine & old growth lodgepole	Same as Alternative C, except ♦ May contribute to improving conditions for whitebark pine and aspen if they are treated to restore fire-adapted ecosystems

Comparing how the alternatives address the issue

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Issue: What level of management direction should be applied to activities that the FWS remand notice found were not a threat to lynx populations?				
Nature of management direction applied to grazing, minerals, roads & over-the-snow recreation				
None	• Grazing Objective GRAZ 01 Standards GRAZ S1 - GRAZ S4 Standard LINK S2	Same as Alternative B	Same as Alternative B	Objective GRAZ 01 Guidelines GRAZ G1 - G4 Guideline LINK G2
None	• Minerals Objective HU 05 Standard HU S3 Guidelines HU G4 & HU G5	Same as Alternative B	Same as Alternative B	Objective HU 05 Guidelines HU G4, HU G5 & HU G12
None	• Roads Guidelines HU G6 - HU G9	Same as Alternative B	Same as Alternative B	Same as Alternative B
None	• Over-the-snow recreation Objective HU 01 Standards HU S1 & HU S3	Same as Alternative B	Same as Alternative B	Objective HU 01 Guidelines HU G11 & HU G12

Table Summary-3. Comparing how management concerns are addressed in the alternatives

Alternative B	Alternative C	Alternative D	Alternative E
Management concern: Size of area to which Standard VEG S1 is applied – Standard VEG S1 limits the amount of unsuitable habitat to 30%			
Applies to an LAU, about 16,000 to 25,000 acres – this size makes it difficult to consider natural disturbance processes because they often involve larger areas	Applies to multiple contiguous LAUs – more closely resembles the scale of many natural disturbances	Applies to sub-basin or isolated mountain range, about 500,000 to one million acres – this size about the scale of many natural disturbances	Same as Alternative C
Management concern: Standards that focus on particular methods, such as timber harvest & salvage logging			
Standards VEG S2, VEG S4, VEG S5 & VEG S6	Standard VEG S4	None of the standards	None of the standards
Management concern: Guidelines that focus on methods such as timber harvest & salvage logging			
None	Guideline VEG G6	Guideline VEG G7	Same as Alternative D
Management concern: How denning habitat is considered			
If less than 10% denning habitat, then • Defer projects in potential denning habitat	Same as Alternative B	If less than 10% denning habitat, then • Defer projects in potential denning habitat, or • Leave enough standing trees & coarse woody debris to provide den sites	Same as Alternative D, only • Fuel treatments don't have to meet 10% denning standard
Management concern: Size of area for Standard HUS1 over-the-snow routes			
LAU this size makes it difficult to consider entire routes because they often involve larger areas	By LAU, or a combination of immediately adjacent LAUs	Same as Alternative C	Same as Alternative C
Management concern: How lynx diurnal habitat is considered			
Standard	Guideline	Same as Alternative C	Same as Alternative C
Management concern: How upgrading roads is considered			
Guideline to avoid upgrading or paving roads	Guideline to avoid or reduce effects on lynx when upgrading or paving roads	Same as Alternative C	Same as Alternative C

Alternative B	Alternative C	Alternative D	Alternative E
Management concern: How adaptive management is incorporated			
The 30% unsuitable habitat limit in Standard VEG S1 could be changed based on a broad scale assessment	Same as Alternative B	Same as Alternative B, plus ♦ Standards VEG S5 and VEG S6 would allow precommercial thinning if a broad scale assessment finds different historic forage levels ♦ Standard ALL S2 would allow projects to proceed if they have no adverse effects on lynx	Same as Alternative B, plus ♦ Standard ALL S2 would allow projects to proceed if they have no adverse effects on lynx, or projects that may adversely affect lynx in the short term but have beneficial effects in the long term

Table Summary-4. Comparing how the LCAS risk factors are addressed in the Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
LCAS risk factor: Amount of lynx habitat in unsuitable condition				
Most FS & BLM plans contain limited or no direction	• Standard VEG S1 limits unsuitable habitat to 30% per LAU unless a broad scale assessment finds different historic levels • Standard VEG S2 limits how much unsuitable habitat can be created by timber harvest to 15% of an LAU over a 10-year period • Standard ALL S1 requires vegetation management projects to maintain connectivity • Guideline VEG G1 encourages creating foraging habitat where it's lacking	• Standard VEG S1 limits unsuitable habitat to 30% per combination of adjacent LAUs unless a broad scale assessment finds different historic levels • Standard VEG S2 changes to Guideline VEG G6 • Changes Guideline VEG G1 to identify forest conditions to target for creating forage habitat	• Standard VEG S1 limits unsuitable habitat to 30% per sub-basin or isolated mountain range unless a broad scale assessment finds different historic levels • Drops Standard VEG S2, so no restrictions on how much unsuitable habitat can be created by timber harvest • Guideline VEG G1 same as Alternative C	Same as Alternative C, only • Standard VEG S1 would not apply to fuel treatment • Standard VEG S2 dropped, same as Alternative D
LCAS risk factor: Denning habitat				
• Most plans contain some direction for keeping dead & down material • Management direction inadequate or lacking in three FS & most BLM plans	• Standard VEG S3 requires retaining 10% denning habitat; if less, projects in potential denning habitat deferred • Standard VEG S4 prohibits salvage after a disturbance kills trees in patches smaller than five acres; unless there is 10% denning habitat, or in developed recreation sites, administrative sites or authorized special use structures or improvements; or in designated road or trail corridors where public safety or access may be compromised • Guideline VEG G2 encourages creating denning habitat where it's lacking • Guideline VEG G3 says to restore or retain denning habitat where it's less likely to burned by wildfire	Same as Alternative B, plus • Standard VEG S4 allows salvage logging within 200 feet of structures, dwellings or outbuildings	Standard VEG S3 same as Alternative B, only • Allows projects to move towards 10% denning habitat by leaving standing trees & coarse woody debris – Guideline VEG G2 incorporated • Standard VEG S4 changed to Guideline VEG G7, so consider no salvage harvest in patches smaller than five acres if less than 10% denning per LAU	Same as Alternative D, only • Standard VEG S3 does not apply to fuel treatment

Comparing how the LCAS risk factors are addressed in the alternative

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
LCAS risk factor: Lynx foraging habitat (winter snowshoe hare habitat)				
Most FS & BLM plans contain limited or no direction, except for old growth in multistoried stages • Could reduce high density forage by 14% • Could reduce total forage by 9%	Standards VEG S5 & VEG S6 defer precommercial thinning in foraging habitat Other treatments: • Could reduce high density forage by 3% • Could reduce total forage by 2%	Standards VEG S5 & VEG S6 defer all vegetation management in foraging habitat, but allows • Research • Within 200 feet of structures • Could reduce high density forage by less than 1% • Could reduce total forage by less than 1%	Standards VEG S5 & VEG S6 defers vegetation management in foraging habitat, but allows • Research • Within 200 feet of structures • Restoring western larch, ponderosa pine & planted western white pine, where 80% of the forage is retained • Whitebark pine restoration • Promoting lodgepole pine old growth • When a broad scale assessment has found forage exceeds its historic availability • Aspen restoration in stand initiation stage • Improving or maintaining long-term foraging habitat in multistoried stages • Could reduce high density forage by 8% • Could reduce total forage by 4%	Same as Alternative B, only • Standard VEG S5 would not apply to fuel treatments or research • Standard VEG S6 changed to less-restrictive Guideline VEG G8 • Could reduce high density forage by 5% • Could reduce total forage by 4%

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
LCAS risk factor: Wildland fire management				
Most FS & BLM plans contain limited or no direction	• Objective VEG O3 says to conduct fire use activities to restore ecological processes & maintain or improve lynx habitat • Vegetation standards would not require suppressing fires or apply to wildland fire use • Guideline VEG G4 says permanent travel routes should avoid facilitating snow compaction, and permanent firebreaks should avoid ridges or saddles	Same as Alternative B	Same as Alternative B	Same as Alternative B
LCAS risk factor: Winter recreation				
Most FS & BLM plans contain limited or no direction	• Standard HU S1 says no net-increase allowed in groomed or designated over-the-snow routes per LAU unless consolidating use or improving lynx habitat • Standard HU S2 says when developing or expanding ski areas, locate routes & access roads to maintain & provide lynx diurnal security habitat • Standard HU S3 restricts over-the-snow access for non-recreation special uses, timber sales, etc., to designated routes • Standard ALL S1 says new or expanded developments must maintain habitat connectivity • Includes Guidelines HU G1, HU G2 & HU G3 that require considering lynx habitat & movement needs	Same as Alternative B, however • Standard HU S1 says no net-increase in groomed or designated over-the-snow routes allowed per combination of adjacent LAUs, unless consolidating use, improving lynx habitat or in areas of consistent snow compaction • Standard HU S2 changed to less-restrictive Guideline HU G10	Same as Alternative C	Similar to Alternative C • Standard HU S1 changed to less-restrictive Guideline HU G11, which says use should not expand • Standard HU S3 changed to less-restrictive Guideline HU G12

Comparing how the LCAS risk factors are addressed in the alternative

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
LCAS risk factor: Highways				
Most FS & BLM plans contain limited or no direction	• Standard LINK S1 says within linkage areas, potential highway crossings must be identified when construction or reconstruction is proposed • Guideline ALL G1 encourages avoiding or reducing effects on lynx when constructing or reconstructing highways and forest highways	Same as Alternative B	Same as Alternative B	Same as Alternative B
LCAS risk factor: Forest & backcountry roads				
Some FS & BLM plans contain direction which may conserve lynx, but others contain little or no direction	• Guideline HU G6 discourages upgrading & paving roads in lynx habitat where increases in human activity would result • Guideline HU G7 discourages building permanent roads on ridge-tops & saddles • Guideline HU G8 discourages cutting brush along low-speed, low-traffic roads • Guideline HU G9 encourages restricting public motorized use on new roads built to access projects & decommissioning new roads not needed for other reasons	Same as Alternative B, only • Guideline HU G6 encourages avoiding or reducing effects on lynx when upgrading & paving roads in lynx habitat where increases in human activity would result	Same as Alternative C	Same as Alternative C

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
LCAS risk factor: Livestock grazing				
Some existing direction (INFISH, PACFISH) partially meets lynx conservation needs in most plans	• Standard GRAZ S1 says grazing shall be managed to allow shrubs & trees to regenerate in fire- & harvest-created openings • Standard GRAZ S2 says grazing shall be managed to ensure aspen propagation • Standards GRAZ S3, GRAZ S4 & LINK S2 says grazing shall be managed to achieve seral stage distribution similar to historic patterns in wet areas, willows & shrub-steppe habitats	Same as Alternative B	Same as Alternative B	Changes standards to guidelines, changing the requirements from imperative "shall" to less-restrictive "should"
LCAS risk factor: Oil & gas leasing				
Most FS & BLM plans contain limited or no direction	• Standard HU S3 says motorized over-the-snow access for mineral & energy exploration & facilities shall be restricted to designated routes • Guideline HU G4 encourages remote monitoring • Guideline HU G5 encourages developing reclamation plans that improves lynx habitat	Same as Alternative B	Same as Alternative B	Similar to Alternative B, only • Changes Standard HU S3 to Guideline HU G12, changing the requirement from imperative "shall" to less-restrictive "should"
LCAS risk factor: Land ownership patterns				
Most FS & BLM plans contain limited or no direction	• Guideline LINK G1 encourages retaining FS & BLM lands in public ownership	Same as Alternative B	Same as Alternative B	Same as Alternative B

Table Summary-5. Comparing how the alternatives affect lynx

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Effects on lynx: Effects of amendment (change in effects from Alternative A)				
Individuals No change *Populations* No change	*Individuals* Beneficial effects; all risk factors fully addressed. *Populations* Beneficial effects; all risk factors fully addressed.	*Individuals* Beneficial effects; all risk factors substantially addressed. *Populations* Long-term beneficial effects; all risk factors substantially addressed.	*Individuals* Some beneficial effects; some risk factors related to denning and foraging habitat only partially addressed. *Populations* Some beneficial effects; some risk factors related to denning and foraging habitat only partially addressed.	*Individuals* Some beneficial effects; some risk factors related to denning and foraging habitat only partially addressed. *Populations* Some beneficial effects; some risk factors related to denning habitat only partially addressed.
Effects on lynx: Effects of plans as amended				
Individuals Adverse effects will continue. *Populations* Adverse effects will continue.	*Individuals* Beneficial effects; all risk factors fully addressed. *Populations* Beneficial effects; all risk factors fully addressed.	*Individuals* Beneficial effects; all risk factors substantially addressed. *Populations* Beneficial effects; all risk factors substantially addressed.	*Individuals* Some beneficial effects; may be some adverse effects over the short term; some risk factors related to denning and foraging habitat only partially addressed. *Populations* Some beneficial effects; may be some adverse effects over the short term; some risk factors related to denning and foraging habitat only partially addressed.	*Individuals* Some beneficial effects; may be some adverse effects over the short or long term; some risk factors related to denning and foraging habitat only partially addressed. Allowing fuel treatment projects may result in adverse effects. *Populations* Some beneficial effects; may be some adverse effects over the short or long term; some risk factors related to denning and foraging habitat only partially addressed. Allowing fuel treatment projects may result in adverse effects.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Effects on lynx: Contributes to conserving species				
No	Yes	Yes	Partially Many standards contribute to conserving lynx but thinning allowances may result in adverse effects	Partially Many standards contribute to conserving lynx but vegetation standards that allow fuel treatment may result in adverse effects

Table Summary-6. Comparing how the alternatives affect other resources

Alternative B	Alternative C	Alternative D	Alternative E
Effects on threatened, endangered and proposed species other than lynx			
All alternatives result in both limited reduction and improvement in habitat and are not likely to adversely affect listed or proposed species. Species include: mammals including grey wolf, grizzly bear and woodland caribou; birds including Mexican spotted owl; fish including bull trout, Chinook salmon, steelhead trout, bonytail chub, Colorado squaw fish, humpback chub, Kendall Warm Springs dace, razorback sucker, sockeye salmon, white sturgeon.			
Effects on sensitive species			
• All alternatives result in limited improvement in habitat for mammals including dwarf shrew and wolverine; birds including black-backed woodpecker, red-naped sapsucker, three-toed woodpecker, Williamson's sapsucker and white-headed woodpecker; and amphibians including boreal toad and northern leopard frog. • All alternatives result in both limited reduction and improvement in habitat and are not likely to adversely any sensitive species. Species include: mammals including fisher and marten; birds including boreal owl, great grey owl, merlin, northern goshawk, olive-sided flycatcher, and Swainson's thrush; fish including artic grayling, Colorado River cutthroat trout, interior redband trout, ling, sicklefin chub, Snake River cutthroat trout, sturgeon chub, torrent sculpin, westslope cutthroat trout and Yellowstone cutthroat trout. • All alternatives may cause limited reduction in habitat for two bird species Golden-crowned kinglet and Hammond's flycatcher. The alternatives are not likely to adversely affect these species.			
Effects on management indicator species			
• All alternatives result in limited improvement in habitat for mammals including beaver, bobcat and moose; birds including blue grouse, downy woodpecker, hairy woodpecker, northern flicker, red-breasted nuthatch, ruby-crowned kinglet; three-toed woodpecker, yellow bellied sapsucker, yellow warbler • All alternatives result in both limited reduction and improvement in habitat and are not likely to adversely any species. Species include: mammals including black bear, elk, red squirrel, mule deer and white-tailed deer; birds including pileated woodpecker; fish including Bonneville cutthroat trout, brook trout, cutthroat trout, large mouth bass, rainbow trout, sculpin, trout; and macro-invertebrates			
Effects on fish & aquatics			
Negligible effect	Same as Alternative B	Same as Alternative B	Same as Alternative B
Effects on plants – threatened, endangered, proposed and sensitive species			
Beneficial or no effect to all species	Same as Alternative B	Same as Alternative B	Same as Alternative B

Alternative B	Alternative C	Alternative D	Alternative E
Effects on timber management			
• May reduce opportunities for regeneration harvest where there are large areas of unsuitable habitat – about 13% of the LAUs exceed the 15% timber & 30% disturbance standards • Could increase opportunities for regeneration harvest where foraging habitat is lacking • Some projects may have to be deferred or locations changed where denning habitat is lacking, but denning habitat generally is not lacking	Same as Alternative B, only • Less likely that the amount of unsuitable habitat would constrain regeneration harvest • Timber harvest in multistoried foraging habitat could be deferred or modified to avoid reducing habitat	Same as Alternative C, only • Some timber harvest could take place in multistoried foraging habitat, especially when it can be designed to maintain & improve forage conditions	Same as Alternative D, only • Timber harvest for fuel treatment would not be affected by any of the vegetation standards
Effects on range			
Limited effects • In some cases, livestock management may need to be intensified or structural improvements added • Most likely to affect grazing on units east of the Continental Divide without aquatic direction in existing plans	Same as Alternative B	Same as Alternative B	Same as Alternative B, only • May have fewer effects because standards changed to less-restrictive guidelines

Alternative B	Alternative C	Alternative D	Alternative E
Effects on developed winter recreation			
• Would not preclude further development • New ski areas & expansions would have to incorporate design measures to provide lynx habitat need • Could affect timing of operations, where ski runs are located & costs associated with development	Same as Alternative B, only • Less likely to affect timing of ski area operations	Same as Alternative C	Less than Alternative C
Effects on minerals			
• No affect on availability • Some potential to increase costs for mineral exploration & development	Same as Alternative B	Same as Alternative B	Same as Alternative B, only • May have fewer effects because standards changed to less-restrictive guidelines
Effects on highways			
Little effect anticipated • Need to incorporate wildlife crossings in highway design, is already being done by state & federal agencies	Same as Alternative B	Same as Alternative B	Same as Alternative B
Effects on forest roads			
No restrictions on existing roads • New roads built in lynx habitat may be restricted to public use • Upgrades to existing roads that result in increased traffic speeds or volumes are discouraged	Same as Alternative B, only • Where upgrades to existing roads result in increased traffic speeds or volumes, they may be allowed if designed to reduce effects on lynx	Same as Alternative C	Same as Alternative C

Alternative B	Alternative C	Alternative D	Alternative E
Effects on changing land ownership			
Limited effect on land exchanges • Discourages disposing of lynx habitat by exchanging it away • Lynx habitat could be acquired	Same as Alternative B	Same as Alternative B	Same as Alternative B
Effects on land uses			
Projects would need to maintain lynx habitat connectivity	Same as Alternative B	Same as Alternative B	Same as Alternative B
Economic effects from limiting precommercial thinning			
• Based on historic average funding, about 120 jobs/year could be reduced & labor income decreased by $1.3 million/year • Based on full funding, about 360 jobs/year could be reduced & labor income decreased by $4 million/year	Same as Alternative B	• Based on historic average funding, about 70 jobs/year could be reduced & labor income decreased by $800,000/year • Based on full funding, about 210 jobs/year could be reduced & labor income decreased by $2.3 million/year	Same as Alternative B
Economic effects from limiting increases to groomed & designated over-the-snow routes			
No effect to the economy • Existing uses would continue • Some undesignated routes may see increased use • May be some local effects because outfitters cannot expand, but most cannot expand now	Less than Alternative B	Same as Alternative C	Same as Alternative C

Comparing how the alternatives affect other resources

Alternative B	Alternative C	Alternative D	Alternative E
Social effects			
• Higher use on existing designated or groomed over-the-snow routes could occur, changing user experience ‡ • Fewer employment opportunities due to decreases in precommercial thinning	• Over-the-snow user experience should not change as a result of Alternative C • Fewer employment opportunities due to decreases in precommercial thinning	Same as Alternative C, only • Employment opportunities more like no-action alternative, Alternative A	Same as Alternative C
Effects on environmental justice			
• No effects to any minority or low-income population or community • Input from all persons & groups has been considered	Same as Alternative B	Same as Alternative B	Same as Alternative B

‡ Grooming levels have been stable during the past five years & are not likely to increase during the next five, because the costs of machinery & grooming operations have increased, while the funding from the states to do grooming has not increased.